



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

PRELIMINARY ISSUE

D130-1048-241
Job Sheet 182060

Accounting Job RD17-1048-01



Part No: D130-1048-241

Job Qty: 1 ea

Part Name: EC130 Aft Crosstube



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 8/16/18

Job Tracking No:

Due Date: 8/30/18

Created By: Marie Lajeunesse

Type: R+D

Description:

Note: D130-1048-241 REV.PRELIM-A8 18.08.16 new issue DP Verify DD

Ship Via:

POSITIVE RECALL

EFFECTIVE 18-09-24 AUTH MJS

RELEASED 9-09-18 DATE 18-10-05

9-09

Rev A
ECN 18-017

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	8/30/18	8/30/18	0.00	0.00	Start Up Crosstubes		GP 2018-09-25
120	CNC Bend Crosstubes	1 pcs	8/30/18	8/30/18	0.00	2.00	CNC Bend Crosstube		GP 2018-09-25
130	QC	1 pcs	8/30/18	8/30/18	0.00	0.00	QC15		38
131	Crosstubes	1 pcs	8/30/18	8/30/18	0.00	1.00	Crosstubes-3		GP 2018-09-25
132	QC	1 pcs	8/30/18	8/30/18	0.00	0.00	QC15		PD 18-09-28
140	Crosstubes	201	8/30/18	8/30/18	0.00	3.10	Crosstubes-2		DP 18-10-3
150	HandFXtube	202	8/30/18	8/30/18	0.00	0.62	HandFinish5		DAS
160	QC	203	8/30/18	8/30/18	0.00	0.00	QC7-3		OCT 04 2018 68 DAS
170	QC	204	8/30/18	8/30/18	0.00	0.00	QC5		OCT 04 2018 68
180	Outsource	1 pcs	8/30/18	8/30/18			SKY002-VC		OCT 01 2018
190	Packaging	1 pcs	8/30/18	8/30/18	0.00	0.00	Packaging2		OCT 02 2018
200	QC	1 pcs	8/30/18	8/30/18	0.00	0.00	QC5		38
210	Crosstubes	1 pcs	8/30/18	8/30/18	0.00	1.00	Crosstubes-2		9-89 DAS
215	QC	1 pcs	8/30/18	8/30/18	0.00	0.00	QC5		OCT 04 2018 68
220	SprayPaint	1 pcs	8/30/18	8/30/18	0.00	0.25	Spray Paint		N/A 9-89
230	QC	1 pcs	8/30/18	8/30/18	0.00	0.00	QC14		N/A
270	Packaging	1 pcs	8/30/18	8/30/18	0.00	0.00	Packaging3-2		N/A
275	DC	1 pcs	8/30/18	8/30/18	0.00	0.00	DC		
280	QC21-FG	1 Ea	8/30/18	8/30/18	0.00	0.00	QC21		

Part Op 120 - 1-Bend tube (sides) as per Dwg D130-1048-241 using CNC bender program _____ and Folio FT _____. 2-Mark Descriptions: cut lines. ***BEND RAD CHECKING TOOL DT10433***

130 - ***BEND RAD CHECKING TOOL DT10433***

131 - 1-Cut tube to height as per inspection sheet. 2-Deburr 3-Scribe part # and batch # using vibrating stylus as per Dwg D130-1048-241

140 - ***** ENSURE PROPER JIG POSITIONING ***** 1-Drill saddle holes and ream hole to finish size as per Dwg D130-1048-241 section F-F & H-H ***position cuff in DT10429 LH/RH fixture. Use DT8550 as center support *** 2-Drill Rivet holes as per Dwg D130-1048-241. (transfer drilled) see sheet 2. -Drill holes section A-A using DT10436 and ream to finished size. -Drill holes section B-B using DT10437 and ream to finished size. *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D130-1048-241

150 - ***IMMEDIATELY AFTER GRINDING***

180 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order

190 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

200 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

210 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1-Rivet Cuffs as per Dwg D130-1048-241 with Sika flex in Between tube & Cuff. B _____ EXP; _____ 2-Shave rivets as required.
 220 - *** MASK PRIOR TO PRIME AND PAINT AS PER NOTE 9 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1- PRIME INSIDE AND OUTSIDE PER QSI005 4.2.1.3.3 (FLOAT SKIDTUBE PRIMER)
 BATCH: _____ 2- PAINT OUTSIDE SURFACE AS PER QSI005 4.2.2.4 (FLOAT SKIDTUBE PAINT)
 BATCH: _____
 230 - Then,Wrap in plastic bag to protect from scratches
 270 - Identify and pack for shipping as per PPP D130-1048-241
 275 - Photocopy bluefile and create labels as per PPP D130-1048-241 CHG _____

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D5610-1	Aft Crosstube	1 Ea (1 ea)	90-Start up Operation	S11197
D5610-3	Cuff	2 Ea (2 ea)	140-Crosstubes	S104655
CR3212-4-06	Rivet	44 Ea (44 ea)	210-Crosstubes	S107784
SCRAP 22				

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D5610-1	1	5	0
140-Crosstubes	D5610-3	2	8	0
210-Crosstubes	CR3212-4-06	44	533	0

Part Specifications

Specifications could not be found.



Container No: S113379



Part: D130 - 1048 - 241

Job No: 182060

Serial No/Batch: S113379

Revision: A7

Inspector:

Exp Date:

Instructions:

Dart Aerospace Ltd.
 1270 Aberdeen Street
 Hawkesbury, ON K84 1K7
 CANADA
 TEL.: 1 813 632-5200
 Email: sales@dartaero.com
 www.dartaerospace.com

Plex 9/24/18 2:40 PM Dart.lajeunesse.marie

Date: 09/25/18

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

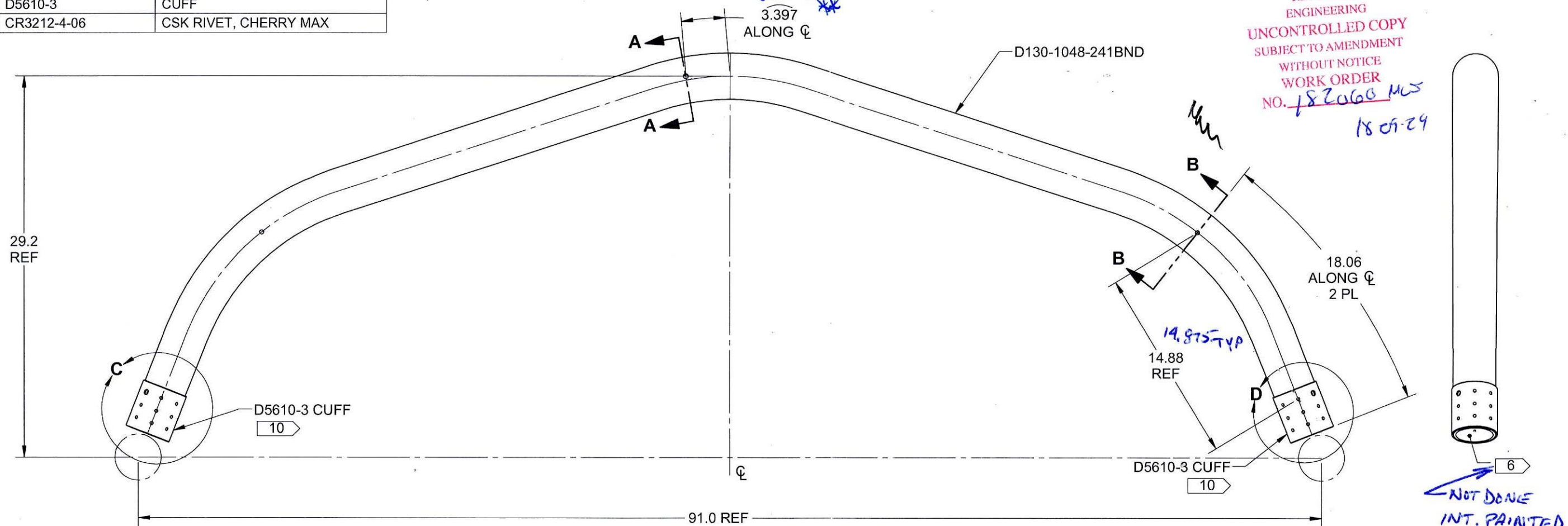
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

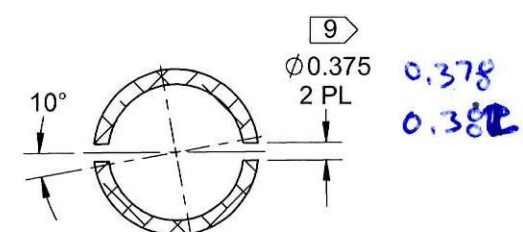
INSPECTION SHEET

Rev	Date	Change	Revised by	Approved
A	14.07.31	New Issue	KJ	

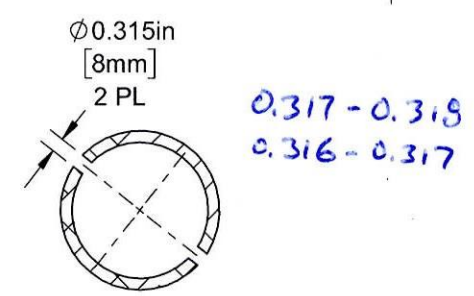
QTY -241	P/N	DESCRIPTION
X	D130-1048-241	AFT X-TUBE (EC130)
1	D130-1048-241BND	AFT X-TUBE (EC130)
2	D5610-3	CUFF
44	CR3212-4-06	CSK RIVET, CHERRY MAX



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 182060 MWS
18 OCT 29



SECTION A-A
SCALE 2X



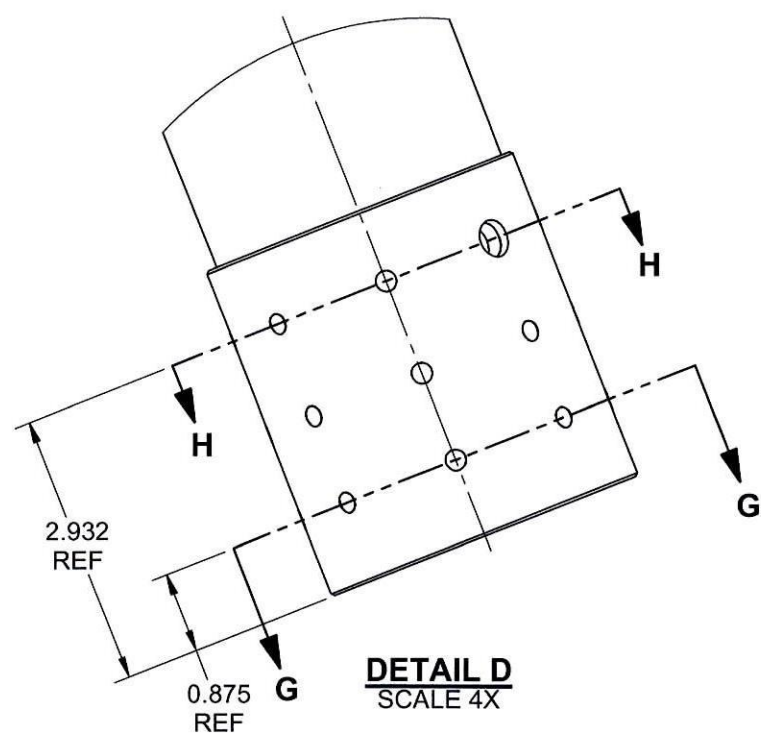
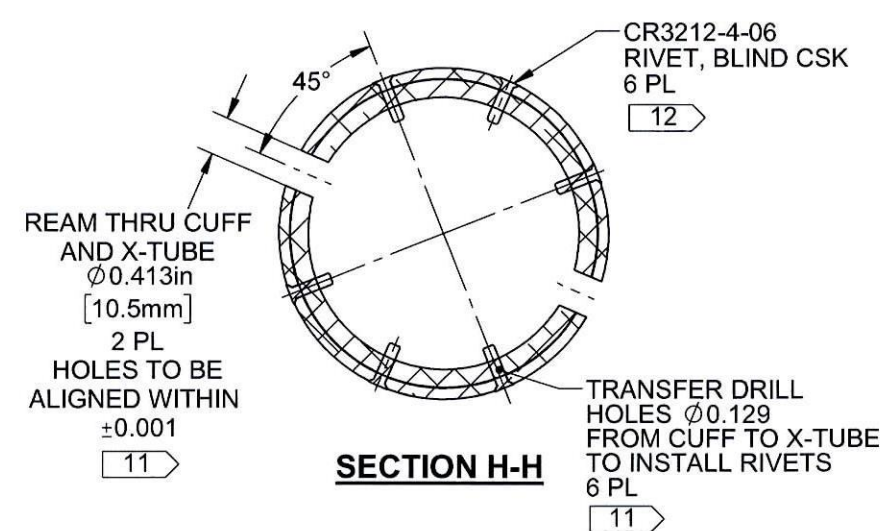
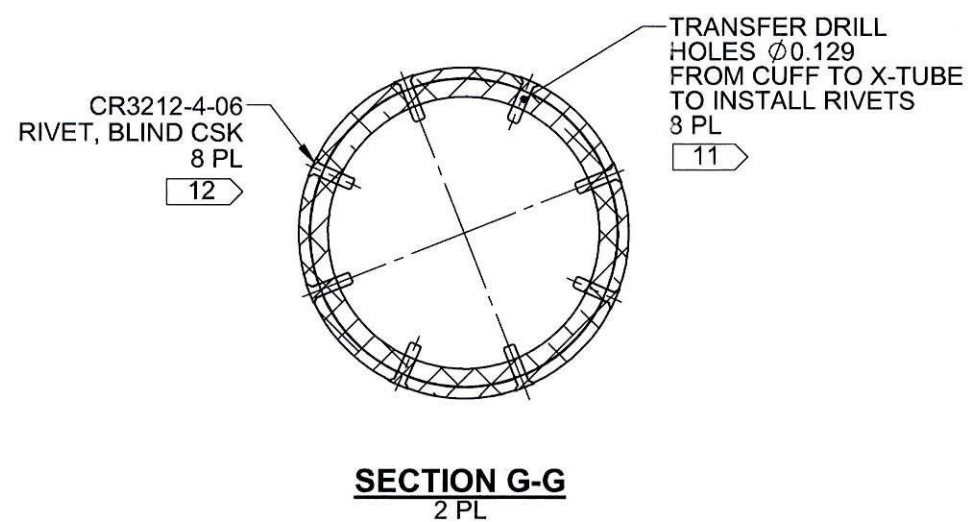
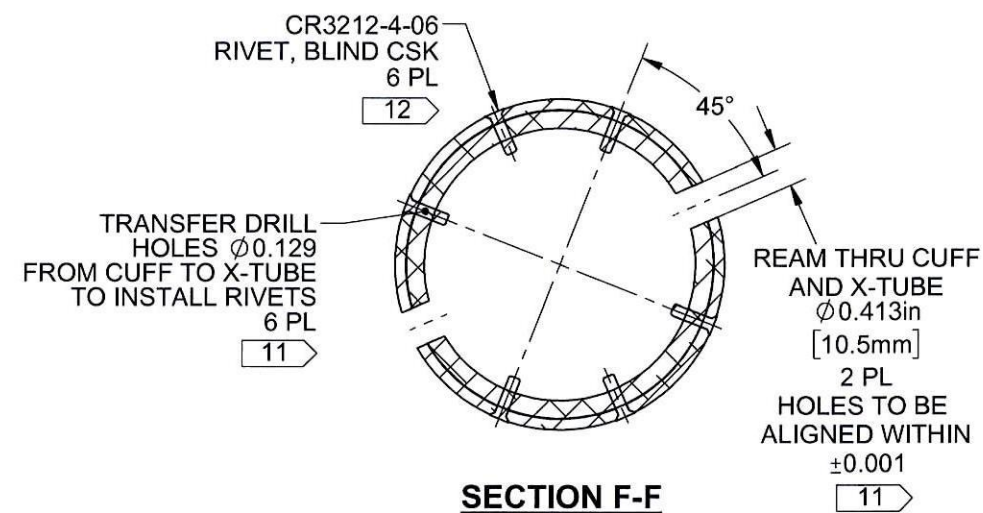
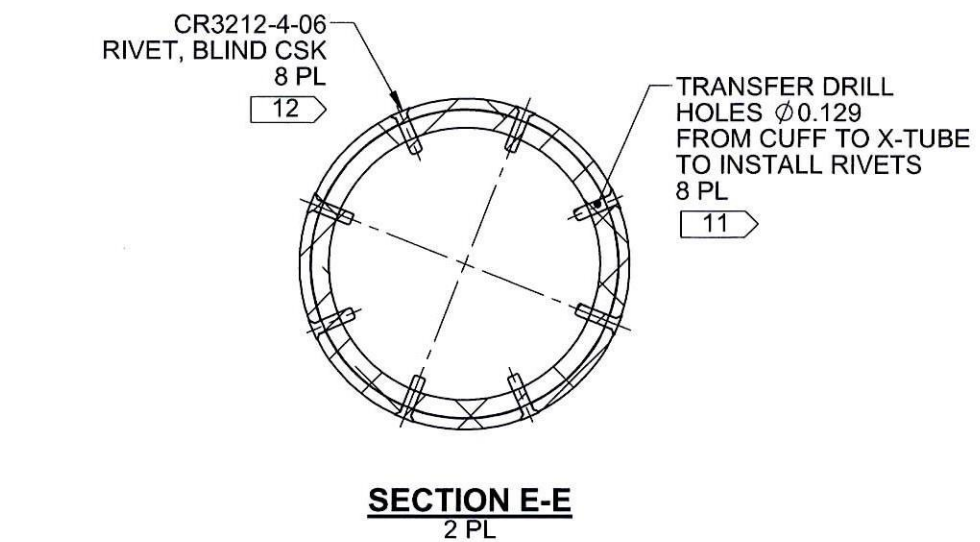
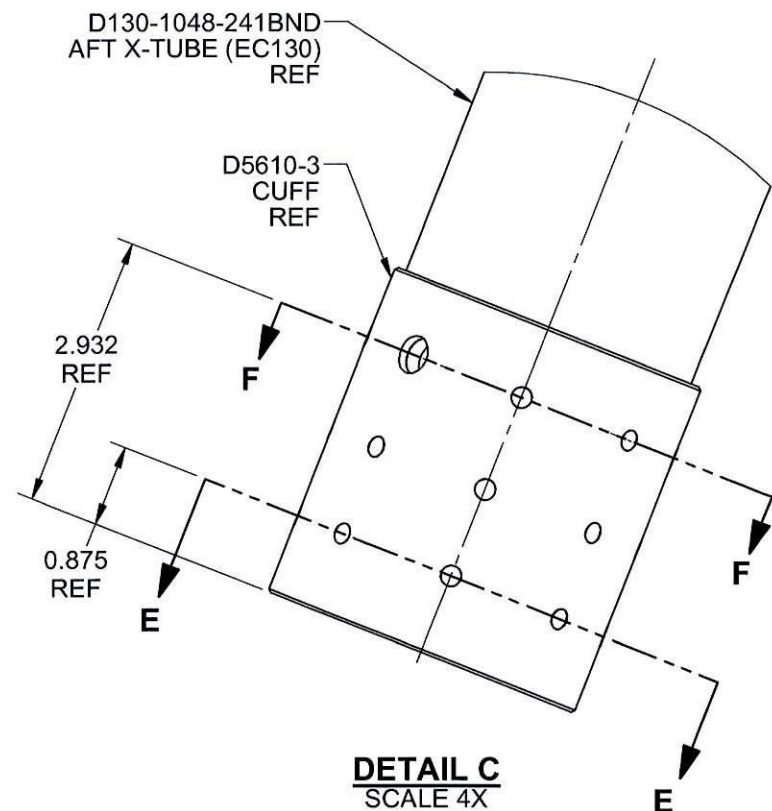
SECTION B-B
SCALE 2X, 2 PL

- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2.1.3.3 (FLOAT SKIDTUBE PRIMER)
PAINT OUTSIDE PER DART QSI 005 4.2.2.4 (FLOAT SKIDTUBE PAINT)
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: SCRIBE DART P/N "D130-1048-241" AND S/N PER DART QSI 044 6.4 (VIBRATING STYLUS) ON INSIDE OF CUFF
 - 7) WEIGHT: 31.95lbs
 - 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, WRINKLES, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE
 - 9) MASK THESE HOLES PRIOR TO FINISH
 - 10) INSTALL D5610-3 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT WITH A LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE. SEAL EDGES OF CUFFS TO ENSURE NO GAPS.
 - 11) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.
 - 12) WET INSTALL RIVETS WITH SEALANT.

PRELIMINARY ISSUE

APPROVED

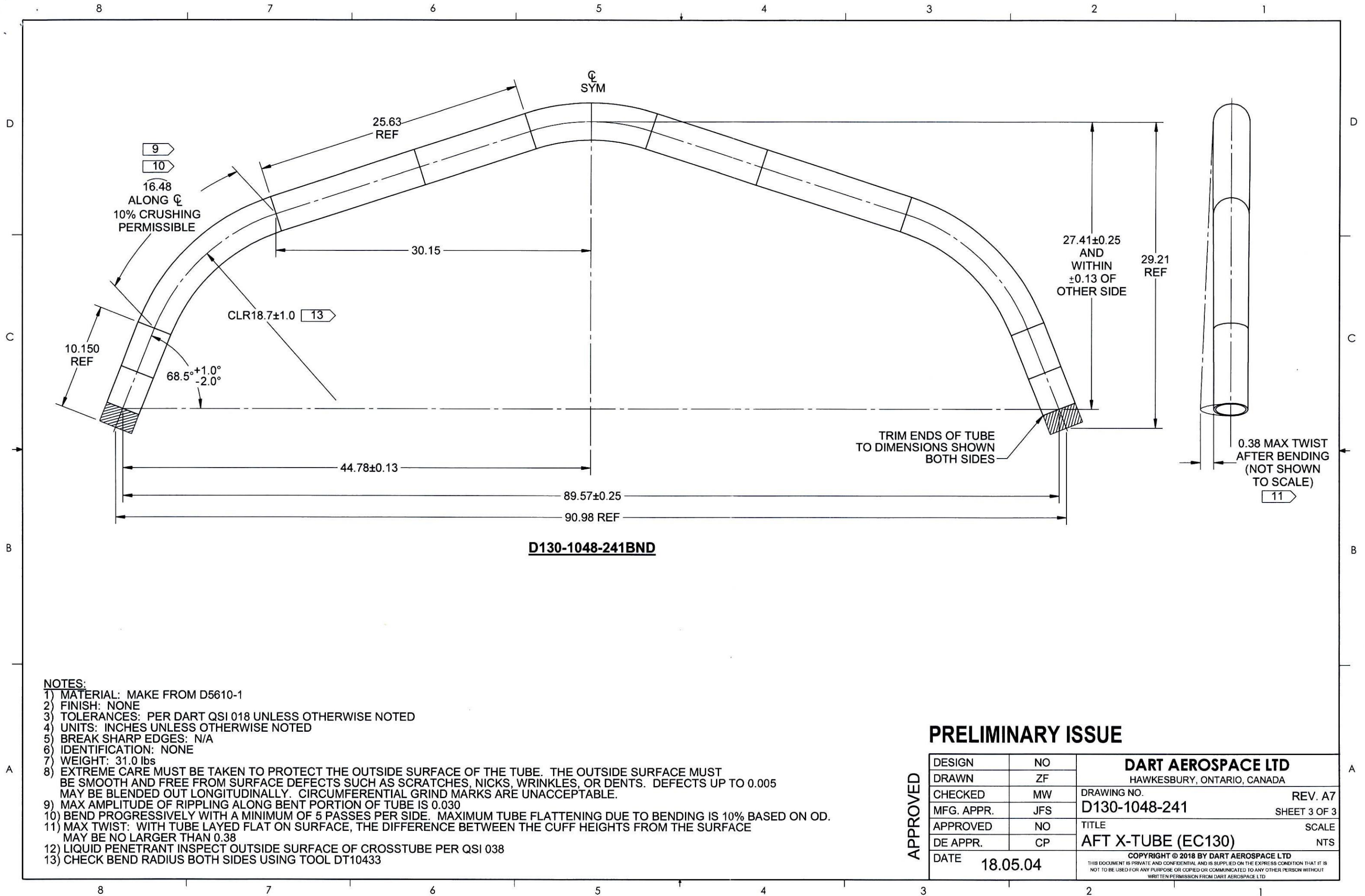
A	NEW ISSUE	ZF	18.05.04
REV.	DESCRIPTION	BY	DATE
DESIGN	NO	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ZF		
CHECKED	MW	DRAWING NO.	REV. A7
MFG. APPR.	JFS	D130-1048-241	SHEET 1 OF 3
APPROVED	NO	TITLE	SCALE
DE APPR.	CP	AFT X-TUBE (EC130)	NTS
DATE	18.05.04	COPYRIGHT © 2018 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



PRELIMINARY ISSUE

DESIGN	NO	DART AEROSPACE LTD	
DRAWN	ZF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	MW	DRAWING NO.	REV. A7
MFG. APPR.	JFS	D130-1048-241	SHEET 2 OF 3
APPROVED	NO	TITLE	SCALE
DE APPR.	CP	AFT X-TUBE (EC130)	NTS
DATE	18.05.04	COPYRIGHT © 2018 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

APPROVED



NOTES:

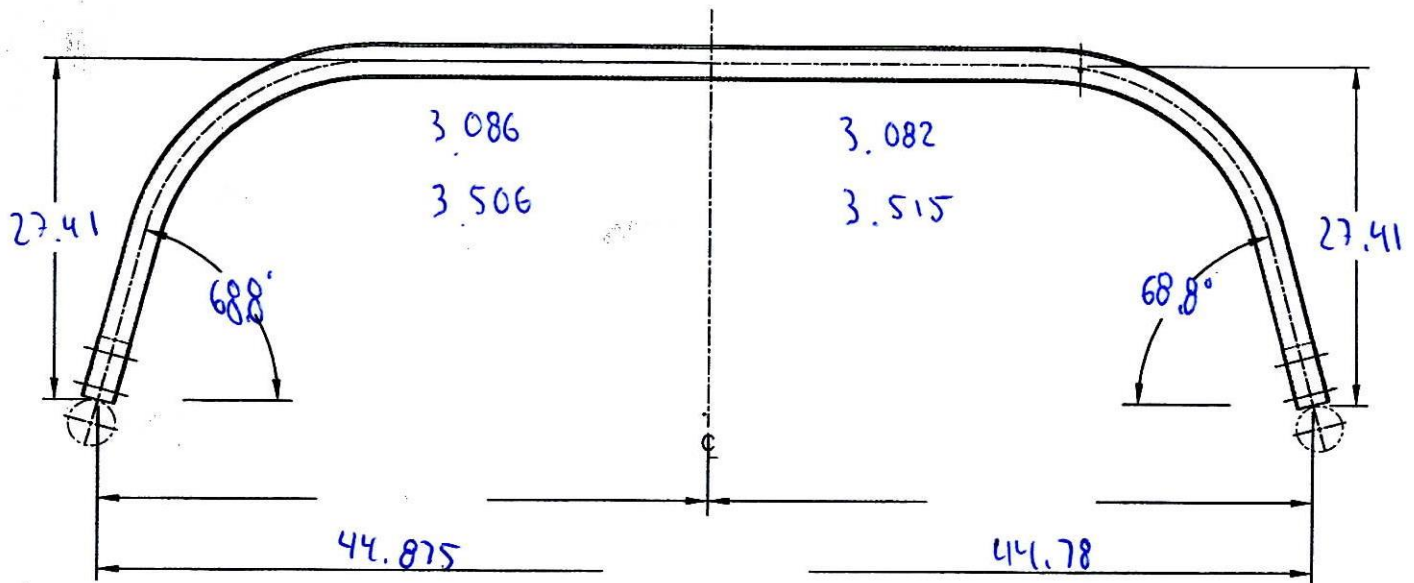
- 1) MATERIAL: MAKE FROM D5610-1
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 31.0 lbs
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, WRINKLES, OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 9) MAX AMPLITUDE OF RIPPING ALONG BENT PORTION OF TUBE IS 0.030
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES PER SIDE. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 10% BASED ON OD.
- 11) MAX TWIST: WITH TUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN THE CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.38
- 12) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038
- 13) CHECK BEND RADIUS BOTH SIDES USING TOOL DT10433

PRELIMINARY ISSUE

APPROVED	DESIGN	NO	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	ZF		
	CHECKED	MW	DRAWING NO.	REV. A7
	MFG. APPR.	JFS	D130-1048-241	SHEET 3 OF 3
	APPROVED	NO	TITLE	SCALE
	DE APPR.	CP	AFT X-TUBE (EC130)	NTS
DATE		18.05.04	COPYRIGHT © 2018 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

DART AEROSPACE LTD		Work Order: 182060
Description:		Part Number:
Inspection Dwg:	Rev:	Page 1 of 1

Required Dimension	Min	Max
Height	27.16	27.66
1/2 Span	44.65	44.91
Angle	66.5°	69.5
Total Span	89.32	89.82
Bending Passes	-	-
Crushing	-	10%



	Side A	Side B
Bending Passes		
Crushing	6.4%	6.6%
Comments		

QC15 Inspection	SEP 25 2019
Date	

Rev	Date	Change	Revised by	Approved
A		New Issue		
B	06.09.19	Reformat; QC level revised	KJ/JM	
C	07.02.06	Reformat	KJ/JM	
D	12.02.15	Added bending passes and crushing	KJ	
E	12.03.07	Revised comments table	KJ	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		☐ OTHER : _____					



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

PO041148

Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

PO No: PO041148
PO Date: 9/26/18
Due Date: 9/28/18
Purchase Order Revision:
Revision Date:
Ship-To Contact: Tsimiklis, ChrisoulaPhone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	180863	D407-667-105	Fwd Crosstube - High 407 : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** OUTSIDE SERVICE -CROSSTUBES Liquid Penetrant Inspection as per QSI 038 Or Level 2 Attach copy of NDT results to work order	Firmed	-	9/28/18	1 pcs	0 pcs	1 pcs	\$121.00/pcs	\$121.00
	180861	1 X	OCT 0 2 2018	Firmed	-	9/28/18	1 pcs	0 pcs	1 pcs	\$121.00/pcs	\$121.00
	180864	1 X	OCT 0 2 2018	Firmed	-	10/5/18	1 pcs	0 pcs	1 pcs	\$121.00/pcs	\$121.00
Sub Total:							3	0	3		\$363.00
2	182865	D212-664-101	Fwd Crosstube - High : TC STC SH01-9 Issue 3, FAA STC SR01298NY 09/01/08, EASA STC EASA.IM.R.S.01304 07/03/06, DGAC MEXICO STC IA-316/2015 15/06/17 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	-	9/28/18	1 pcs	0 pcs	1 pcs	\$121.00/pcs	\$121.00
	182864	1 X	OCT 0 2 2018	Firmed	-	9/28/18	1 pcs	0 pcs	1 pcs	\$121.00/pcs	\$121.00
	182867	1 X	OCT 0 2 2018	Firmed	-	9/28/18	1 pcs	0 pcs	1 pcs	\$121.00/pcs	\$121.00

Plex 10/2/18 10:17 AM dart.tsimiklis.chrisoula



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

PO041148

Items											
Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
	182866		<i>1 X</i> OCT 0 2 2018 <i>[Signature]</i>	Firmed -		10/5/18	1 pcs	0 pcs	1 pcs	\$121.00/pcs	\$121.00
						Sub Total:	4	0	4		\$484.00
<i>3</i>	180148	D119-796-141	Fwd Crosstube Installation Without Step (No Hardware) : TC STC SH14-45-Issue 1, FAA STC SR03504NY 15/01/28, EASA STC 10052022 Revision 1 15/02/13, DGCA INDIA LoA 07-09/2011-AED (Part) 15/07/16, BRAZIL STC 2015S07-16 15/07/30, CAAP PHILIPPINES LoA 16/05/11, CHINA VSTC0757 16/07/22, RUSSIA STC CT316-A119 16/08/11, DGAC INDONESIA STC SR025 18/02/19 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed -		9/28/18	1 pcs	0 pcs	1 pcs	\$121.00/pcs	\$121.00
			<i>1 X</i> OCT 0 2 2018 <i>[Signature]</i>								
<i>4</i>	182055	D130-1048-241	EC130 Aft Crosstube *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed -		9/28/18	1 pcs	0 pcs	1 pcs	\$121.00/pcs	\$121.00
			<i>1 X</i> OCT 0 2 2018 <i>[Signature]</i>								
	182060		<i>1 X</i> OCT 0 2 2018 <i>[Signature]</i>	Firmed -		9/28/18	1 pcs	0 pcs	1 pcs	\$121.00/pcs	\$121.00
						Sub Total:	2	0	2		\$242.00
										Grand Total:	\$1,210.00

DAS
38
9-89



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO041148

Order Notes

Procurement Quality Clauses

A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 10/2/18 10:17 AM dart.tsimiklis.chrisoula



skyservice Work Order Traveler

Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO37590	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO41148 ✓
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT INSPECTION (LIQUID PENETRANT) ON 10 CROSSTUBES

ITEM ID: D119-796-141 FWD CROSSTUBE

1 - WORK ORDER ID#: 180148 ✓

ITEM ID: D212-664-101 FWD CROSSTUBE - HIGH

2 - WORK ORDER ID#: 182866 ✓

3 - WORK ORDER ID#: 182865 ✓

4 - WORK ORDER ID#: 182864 ✓

5 - WORK ORDER ID#: 182867 ✓

ITEM ID: D130-1048-241 EC130 AFT CROSSTUBE

6 - WORK ORDER ID#: 182055 ✓

7 - WORK ORDER ID#: 182060 ✓

ITEM ID: D407-667-105 FWD CROSSTUBE - HIGH 407

8 - WORK ORDER ID#: 180861 ✓

9 - WORK ORDER ID#: 180863 ✓

10 - WORK ORDER ID#: 180864 ✓

DAS
38
9-89

Action Taken:		Date:	Initial/Stamp:		
LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE (ITEMS 1-10) AS PER ASTM1417M-13		SEP 26 2018			
NO CRACK FOUND					
Pen: ZL-27A MWO5678 DEV: SKD-S2 MPO11715 CLEANER: SKC-S MPO13923					
Description	Location P/N	Qty	Batch	S/N Off	S/N On
N/A					

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:		ACA/SCA Stamp	Date:
Name:			SEP 26 2018



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO041261**

Supplier: ATE003-VC
Atelier Debosselage
358 Principale
Calumet
QC
J0V 1B0 Canada
Phone: 819 242 5633

PO No: PO041261

PO Date: 10/4/18

Due Date: 10/5/18

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Lavoie, Chantal
Phone: clavoie@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

Items

Line Item	Job	Part	Supplier Part No	Item No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1			Paint d130-1048 crosstube	OUTSIDE SERVICES		Firmed	71900-200-0000	10/5/18	4 Ea	0 Ea	4 Ea	\$250.00/Ea	\$1,000.00
2			Paint d130-1048 skidtube	OUTSIDE SERVICES		Firmed	71900-200-0000	10/5/18	2 Ea	0 Ea	2 Ea	\$250.00/Ea	\$500.00
3			Paint saddle	OUTSIDE SERVICES		Firmed	71900-200-0000	10/5/18	4 Ea	0 Ea	4 Ea	\$40.00/Ea	\$160.00

Grand Total: \$1,660.00

Order Notes

Plex 10/4/18 3:24 PM dart.lavoie.chantal

Entered: _____ Date: _____



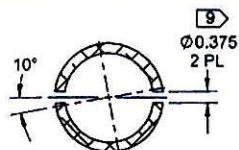
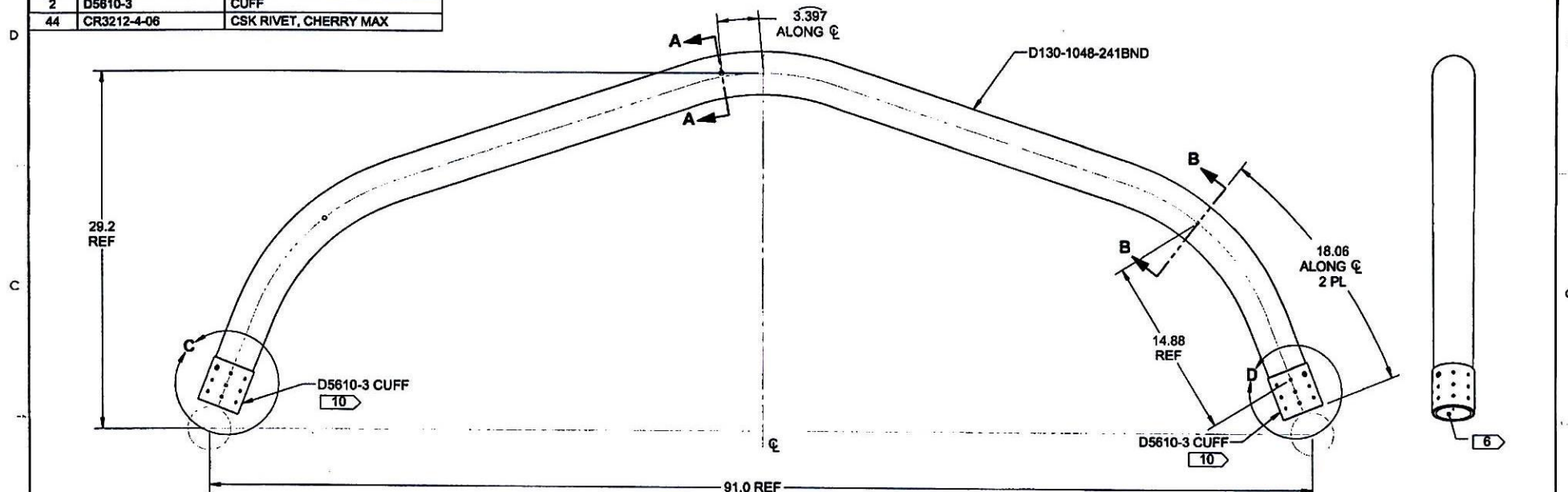
WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: <u>182260</u> Part No. <u>D130-1048-241</u>	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☒	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☒ Water Jet ☐ Supplier Quality ☐			
Date: <u>18/10/3</u>	Sequence #: _____	QTY Affected: _____		MRB (QSI042) DAS 12 9-89 <u>18/10/3</u>	
Description Work Order Deviation Paint is representative only and not per QSI 005.		Disposition use as is. Acceptable for testing. PO: <u>P0041261</u>		Completed By DAS 12 9-89 <u>18/10/3</u> Lead hand / Supervisor DAS 9 9-89 <u>18-10-05</u> QC/QA Coordinator DAS 9 9-89 <u>18-10-05</u>	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
		Other/Details: _____			

QTY -241	P/N	DESCRIPTION
X	D130-1048-241	AFT X-TUBE (EC130)
1	D130-1048-241BND	AFT X-TUBE (EC130)
2	D5610-3	CUFF
44	CR3212-4-06	CSK RIVET, CHERRY MAX



SECTION A-A
SCALE 2X

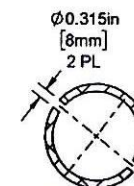
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2.1.3.3 (FLOAT SKIDTUBE PRIMER)
PAINT OUTSIDE PER DART QSI 005 4.2.2.4 (FLOAT SKIDTUBE PAINT)
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: SCRIBE DART P/N "D130-1048-241" AND S/N PER DART QSI 044 6.4 (VIBRATING STYLUS) ON INSIDE OF CUFF
- 7) WEIGHT: 31.95lbs
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, WRINKLES, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE
- 9) MASK THESE HOLES PRIOR TO FINISH
- 10) INSTALL D5610-3 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT WITH A LAYER OF SIKAFLEX-241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE. SEAL EDGES OF CUFFS TO ENSURE NO GAPS.
- 11) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.
- 12) WET INSTALL RIVETS WITH SEALANT.

D130-1048-241 AFT X-TUBE (EC130)

RELEASED

2018 OCT 02
E.C.N. 18-017



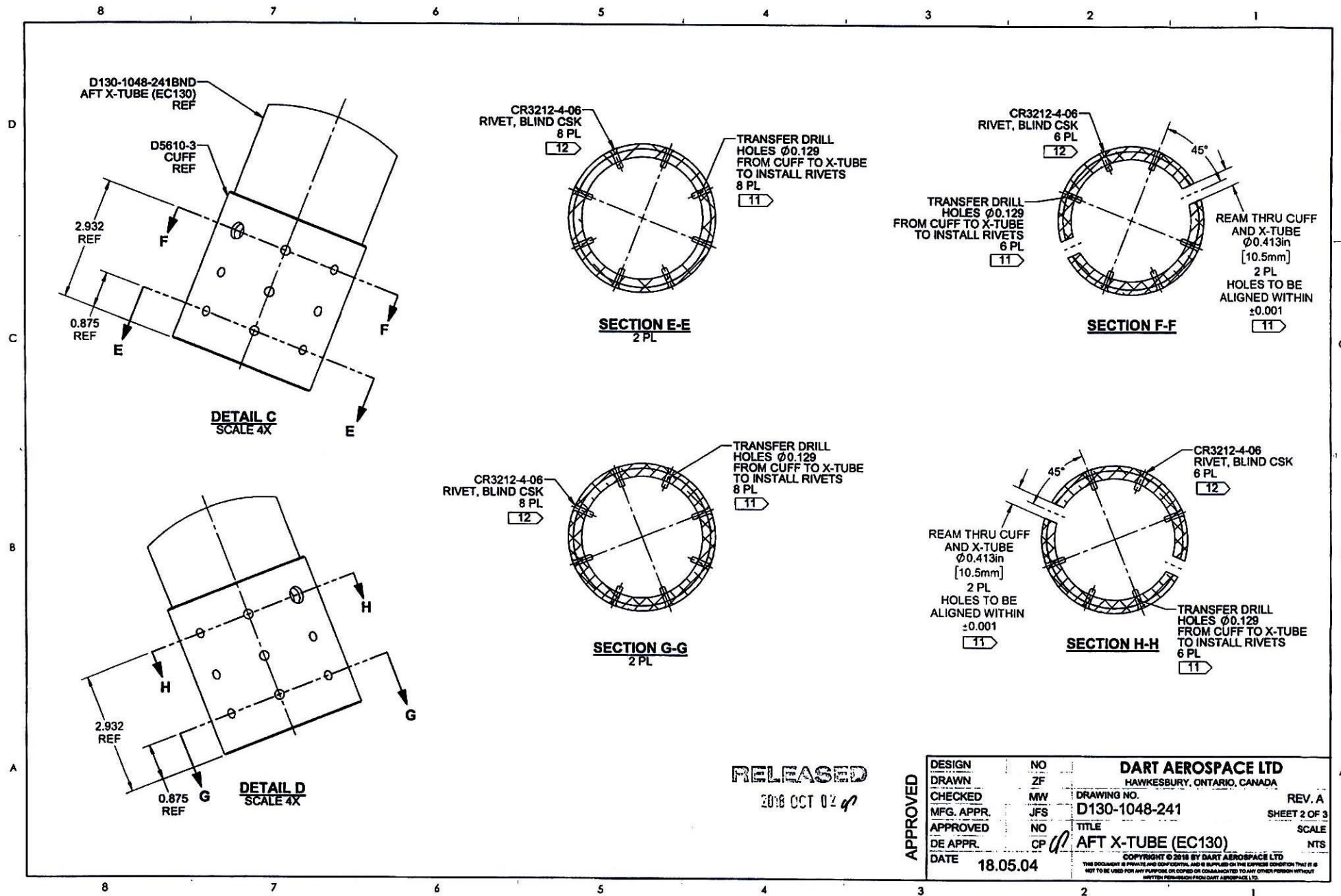
SECTION B-B
SCALE 2X, 2 PL

A NEW ISSUE		ZF	18.05.04
REV.	DESCRIPTION	BY	DATE
DESIGN	NO		
DRAWN	ZF		
CHECKED	MW		
MFG. APPR.	JFS		
APPROVED	NO		
DE APPR.	CP		
DATE	18.05.04		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D130-1048-241	REV. A
TITLE AFT X-TUBE (EC130)	SCALE NTS

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APPROVED



RELEASED
2018 OCT 02 47

DESIGN	NO	DART AEROSPACE LTD	
DRAWN	ZF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	MW	DRAWING NO.	REV. A
MFG. APPR.	JFS	D130-1048-241	SHEET 2 OF 3
APPROVED	NO	TITLE	SCALE
DE APPR.	CP	AFT X-TUBE (EC130)	NTS
DATE	18.05.04	COPYRIGHT © 2018 BY DART AEROSPACE LTD	
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